Mixing Up Ratios
Lesson Plan

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Goal: To use different concentrations of a fruit drink to establish how parts of a ratio are related.

Grade and Course: Math 7th grade

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KY Standards:
MA-7-NPO-S-RP3
Students will develop proportional reasoning and apply to real-world and mathematical problems (e.g., rates, scaling, similarity).
MA-07-1.4.1
Students will apply ratios and proportional reasoning to solve real-world problems (e.g., percents, sales tax, discounts, rate).
MA-7-NPO-U-4
Students will understand that proportional reasoning is a tool for modeling and solving problems encountered in everyday situations.
Objectives: At the end of the activity, the students should have a better understanding of how the parts of a ratio or proportion are related.
Resources/materials needed: 4 pitchers filled with fruit drink (usually requires one container of pre-sugared mix). The first pitcher is filled with .25 cup of mix and 1.75 cups of water (1:7), this according to the directions. The second pitcher has .125 cups of mix and 1.875 cups of water, this is (1:15). The third pitcher has .5 cups of mix, with 1.5 cups of water (1:3). The last pitcher has one cup with 1 cup mix and 1 cup water (1:1).
One clear cup per student
One worksheet per group
Description of Plan: The lesson begins with the students unaware of the activity for the day. The students should be set into groups (4 for my purposes). You should have the four pitchers filled with different ratios of mix to water setting at the front of the room. Ideally, your pitchers are not clear so that students cannot make deductions until the appropriate time. Hand each student a clear plastic cup, they do not need to be large. Be sure that no one is playing with them. Warn them that the activity cannot take place with immaturity, and the activity will proptly be stopped if any is exhibited.

The first step is to fill all students' glasses with about an ounce of the first mixture. Also, one worksheet per group is given out. Before taking a drink, ask the students to predict the proportion according to the tone and consistency of the mixture. Remind them of some probable ratios (i.e. 1:2, 3:4, etc.) After this, invite the entire class to drink from their cups all at once. After drinking, have the group decide whether their prediction was correct, and if not, revising it accordingly. These steps should be repeated for the other three mixtures. At the end of the activity, ask the students to make any changes needed due to tasting the other mixtures. Then together read the true proportions aloud, be sure to ask the students for their predictions first. Then discuss the incorrect proportions and why they are incorrect. It is also interesting to take a vote as to which mixture the students think tastes best, and then reveal to them the mixture that has the proportion according to

the directions.

Lesson Source: Connected Mathematics2
Instructional Mode: Worksheets, Smartboard/Whiteboard, Discussion
Date Given: Dec.
Estimated Time: 1.5 hours, depending on the amount of time you allot for discussion.
Date Submitted to Algebra^{3}: August 26th, 2008
Form 8-18-07